ISSN 2219-4746

PARENTS STUDENTS TEACHERS

Issue No. 4

Nurturing the 資優 Gifted

The Gifted Education Magazine for Parents

Nov 2010

Helping gifted children develop through enrichment

Feature Articles:

"Respect, Trust, and Joy: Necessary Components for Inquiry Learning" by Dr Mark Salata, Ph.D

"Nurturing Mathematically Gifted Children" by Mr. Law Ka-ho

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Content

What's new

"A Guide to Nurturing the Gifted – Understanding the Affective Characteristics of Gifted Children" booklet is published!

Academic studies should not be the only area of concern for parents of gifted children. Every child needs to be loved and appreciated, and the gifted child is no exception. Some parents of gifted children, however, focus only on academic and cognitive development but neglect the affective characteristics and needs of gifted children. Some gifted children are more sensitive to their surroundings than their non-gifted counterparts, so they need encouragement and understanding otherwise negative emotions may emerge, which can affect learning.

We have just published "A Guide to Nurturing the Gifted – Understanding the Affective Characteristics of Gifted Children" booklet, which introduces the affective characteristics and needs of gifted children, and offers some suggestions on how to care for the needs of gifted children.

Editorial

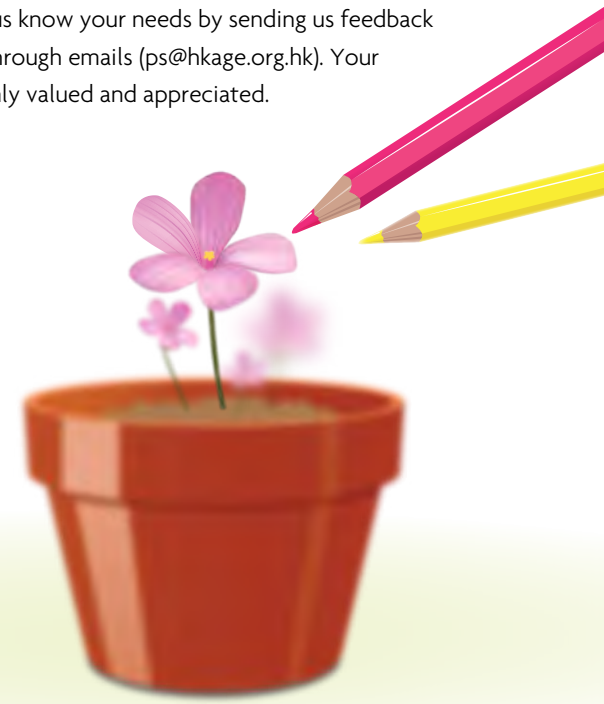
Helping gifted children develop through enrichment

Do you still remember the first reaction you had when you realised your child was gifted? In our frontline experiences of working with parents of gifted children, most of them are caring and responsive. They often focus all their attention on resources for fully stretching their children's potential. Some of them even re-structure the weekend schedule for their gifted children so as to make the best of the time and resources available.

It is our conscious effort to remind parents not to make their gifted children the centre of a family's universe, but at the same time we hope that parents can understand the impact of social and emotional needs on gifted children's learning. If you have read the past few issues of our magazine, you will understand the strong correlation between social and emotional adjustment and the learning outcome. Just in case you have missed the first few issues, you are always welcome to download the magazines from our website (Publication under "Parent Zone"). After looking into the affective needs of the gifted children, we focus on how to strengthen their learning.

In this issue, we look into inquiry learning of the gifted and share some ways to nurture those with high mathematical ability. Dr Gagné's DMGT model is introduced so that parents can understand the talent development process more thoroughly and systematically. We have examined the challenges faced by young exceptionally gifted children through a case study and strategies on how to help them excel are illustrated. Also there is a reflective piece written by a gifted adolescent and his mother. Last but not least, a book on how parents facilitate the affective growth of the gifted through everyday encounter is reviewed.

There are always challenges, joys, mistakes, risks and great satisfaction in parenting specially talented children. We hope that by continuously providing useful information for you, we can collaborate and make the community a better place for the gifted in Hong Kong. Please do not hesitate to let us know your needs by sending us feedback or comments through emails (ps@hkage.org.hk). Your response is highly valued and appreciated.

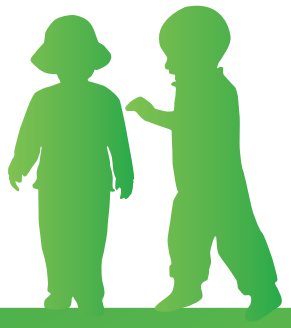


The booklet "A Guide to Nurturing the Gifted – Understanding the Affective Characteristics of Gifted Children" lists some websites of local and international organisations that provide parents with practical information to help them gain a better understanding of the issue of gifted education.

The booklet can be downloaded from the Parent Zone of the Academy's website:
http://www.hkage.org.hk/b5/pz_publications.html

"Respect, Trust, and Joy: Necessary Components for Inquiry Learning"

by Dr Mark Salata, Ph.D.



My daughter, at the age of three, looked down a water drain near a parking spot and heard the splashing of drops three meters below. The drain cover had slats such that one could peer into it and see the water splash. She seemed determined to study it. I let her and, while doing so, asked a question or two. She saw a small stone nearby and wanted to pick it up and drop it in. I told her to try it and she was excited to hear a larger splash than before.

That was one of many inquiry moments that I have shared with my daughter. I find them to be fun and revealing. They remind me of how human beings are simply naturally curious and it reveals to me my daughter's interests and how she studies the world around her. I tend to see her and other children through the following quote:

"Regard man as a mine, rich in gems if inestimable value. Education can, alone, cause it to reveal its treasures and enable mankind to benefit therefrom."

– Baha'u'llah

Our responsibility is not to place knowledge and wisdom into a child, at home or at school, but it is to facilitate the development of knowledge and wisdom within each individual according to those gems. Some children's gems are joyfulness, caring, or perseverance, while others may have great enthusiasm, humility, or kindness. Each of these gifts of character can be utilised to support inquiry experiences.

To facilitate such experiences, three virtues need to be established: respect, trust, and joy. It is what I refer to as the virtues triad for inquiry-based learning. With these three, the learning environment can be most fertile, like setting the soil for the seed. Without the virtues triad, the substance of inquiry-based learning is sterile and the learning becomes mechanised and less useful for personal growth and conceptual understanding.

Respect

Respect comes from the recognition that all of us, adult and child, have inestimable gems that we need to polish and apply in our daily lives for our own and humanity's benefit. As a father, I understand that my daughter, like any other child, is an explorer and curious. She needs to learn about the world she lives in and I give her room to do so. I respect her by providing safe opportunities to interact with the world and encouraging her to do so. For example, when she was four, she recognised that at the entrance of a childcare facility, there were many snails crawling on the plants. I could have whisked her away from them because of my own need to rush through this simple task - the task of dropping off my child at the facility. I could have ignored it as unremarkable or, worse yet, provided her a reason to not inquire by stating that snails are disgusting.

Instead, I stated that we can both look at them for a few minutes and then come back and check if they would be there when I picked her up in the afternoon. With this, she was given a clear time limit, an encouraging father and the opportunity to explore later. Now, this moment could only happen if she trusted me to follow through with my words. It also provided an opportunity for me to trust her response to the limited time I provided her with the snails in the morning.

Trust

This trust had been formed long before that moment, and it still is reinforced every time I tell her something. Having your action be consistent with your words goes a long way to allow you to frame limited inquiry moments for a few minutes. Imagine if she did not trust me that we would check on the snails in the afternoon. She may complain that the few minutes in the morning were not enough - thereby extending the time used in the morning and creating a needless dramatic moment.

Even the best of children though may wish to extend the inquiry moment and sometimes complain, typically with an annoying sound of disappointment (choose your least favorite that may come from your child). If you are caught in such a situation, then you have two choices. The first choice is to give in to the complaint. I don't recommend this choice however, because the child would learn that complaining is a successful strategy. The second choice is to state that, "I don't respond to that sound and you need to use words. Tell me in words."

Sometimes, the child can articulate a decent reason to extend the inquiry moment. In this example, my daughter once said, "I think they are moving to the shade. I'd like to look over there." And, at other times, it is a good moment for the child to learn that annoying sounds don't work anymore. Some flexibility is necessary, since a young child is dynamic and neither always good nor always bad - much like adults have varying moods, wants, and needs.

Another aspect of trust and respect is how you respond to the child's statements and ideas. Among the greatest things to destroy a child's inquiry mindset is mockery of their ideas by the adults they love. Sometimes a child will state the strangest of ideas. My daughter once told me that she is allergic to sandwiches. I asked her what does allergic mean. She said that her friend told her that allergic means "you don't like something". Instead of mocking or belittling the statements your child makes, especially those that are odd from an adult's point of view, ask your child to clarify or explain a phrase or particular word in the sentence. Sometimes that word may be a simple one, but understanding the meaning that your child put into the word can reveal a lot about their thinking. It is their thinking that you want to understand. It can reveal: 1) what they are interested in and 2) how they understand the world around them. Both of which are necessary to know in order to begin to educate anyone.

During an exploration in an inquiry moment, one's words need to be aligned with a proper tone and even body language. While my daughter and I explored the snails, I could not display agitation. If I did, then the moment would not have been honest. A child can sometimes be even more sensitive to your state of mind through your tone, facial expression, and body language than your words. When we explored the snails, I began to think more like a child - with a sense of curiosity and wonderment. Her discoveries were now also mine and, like adventurers in a new world, we smiled and questioned together. By joyfully exploring together, we created a moment of inquiry in the midst of a busy day.

Joy

Joy, not fun, is the third part of the triad of virtues, because for inquiry-learning to occur, a parent or educator should seek to have a higher level of intellectual and emotional engagement. Of course, joy can be at many levels and an adult's and child's sense of joy may be different. In every sense though, joy can improve one's learning (seek your local neuroscientist for the details) and individual motivation to learn will increase.

How can you use these triad of virtues and support inquiry learning at home? Ask yourself, what kinds of questions do I ask my child(ren)? Do I take advantage of those inquiry moments? These moments can be spontaneous, like the one mentioned above, but they can also be generated by taking your children to a place rich with items or ideas to inspire wonderment. It could be a science museum, a library, a park, or even a sport event. In each of these, art, language and science applies. Begin by starting to ask questions yourself, out loud, "I wonder, ..." If your child is old enough to engage in conversation, then, after you asked yourself the question aloud, ask him or her, "What do you think?" Wait for a few seconds, allow him to think about what you shared. Then when he responds accept the thought as if it was shared by your best colleague and think about his response for a few seconds as well. The suggested pauses model a critical thinker. Those moments of silence are when the creative intellect can begin to make connections. The conversation should not become a debate, because a debate would place you and your child into confrontational positions. It should be a process that tells your child that it is okay for him or her to communicate ideas with you. It will also provide you greater access to the inner thoughts of your child.

Another important aspect of questioning is to ask for depth of understanding. For example, when my daughter used the word snail when describing those aforementioned animals on the plants, I could have affirmed her correct answer and moved on. In order to make the most of the inquiry opportunity; however, I chose to ask probative questions. I wanted to know what she understood the word 'snail' to represent. I asked her, "What makes it a snail?" She responded and, while I gained greater insights, she learned that questions are a natural part of our lives.

I could easily have asked many more questions to illuminate how she distinguished the snails from the plants (by color, shape or reproduction), but I saved those for future opportunities with the snails. After a few visits with the snails over the course of many weeks, she began to start conversations and ask questions such as, "I wonder what they eat?", "Where do they go in the afternoon, maybe under the leaves because it is hot?", and "How do they make babies?" She even told me once, "That one's the mommy and that one is the baby." I said, "Why do you think so?" "Because that is the larger one, so it has to be the mommy," she said.

The examples given above are about nature, but any subject can be used as inquiry. Choose your favorite poem and you can find a rich detail of history, culture and art within the words that are chosen, let alone looking up the biography of the writer. My daughter and I write books together. Prior to her being able to write words, she would draw pictures on paper and then I would staple them together. She would then dictate the story to me. We were exploring language and meaning through characters and the relationships between characters. Sometimes the stories were about her

friends and I would learn more about them through the story. I look forward to comparing her earliest stories to one's she may write when older.

What else may be explored? Look around you right now and ask, "Where did that come from?" or "What is this made of (and how and why)?" As I write this article, I see on my desk a pen that has a spring in it and some specially formed plastic. It may have been made half way around the world and the process of combining all of the materials and getting it to me is one avenue that I can explore. I can even explore the history of the ball point pen - a rich description of invention and creativity from the late 19th century and early 20th century. Or I can explore it from the angle of a design problem and ask, "Why was this designed and what problem(s) did it solve?" Be passionate about learning all the strange and wonderful things in this world. The more you, as a person and a parent, value curiosity and model it, the more will your child seek to understand the world and seek to better it through respect, trust, and joy.

Profile of Dr Mark Salata

Dr Mark Salata (Ph.D. Science Education, University of Virginia) is an educational consultant specialising in inquiry-based learning. Dr Mark SALATA was the Associate Director of Curriculum and Professional Development at BioBridge and the Director of BSCS Keys to Science Institute at Colorado Springs. He has over 10 years' experience in providing professional development workshops for primary, secondary and tertiary level educators and has taught college biology for 5 years. He has conducted many workshops worldwide, including Hong Kong and Singapore, on the use of inquiry approach especially in science.

Tips for Parents

1) Most questions can be divided into three categories. The first is about objective facts or procedures, such as "What modes of transport can I take to go from Central to Kowloon Tong?" The second is about subjective preferences, such as "What would you like for dinner?" and the third category is about judgment, such as "Should high school students fall in love?" In responding to the third category of questions, children have the opportunity to use critical thinking and need to consider various perspectives. Parents can think about the kinds of questions they may normally ask when spending time with their children, and phrase questions that lack a single correct answer, thus giving your child the opportunity to practice critical thinking at home with you.

2) To foster a family environment conducive to creative development, in addition to having an open mind, parents should learn to listen to children's questions and sharing, and set an example on a daily basis that demonstrates how to use mistakes as learning opportunities. Just praise the child's appropriate behavior, and recognise the courage of the child.

Feature Article

Nurturing Mathematically Gifted Children

by Mr Law Ka-ho

In recent years, Gifted Education has become an important area of concern to both educators and parents, and mathematically gifted children are often more likely to be discovered than those who are gifted in other subject domains. As parents, how do we nurture a mathematically gifted child? We use the Q&A presentation to put forward some viewpoints.

Is my child gifted in Maths?

There is no single definition of "giftedness", and the differentiation between a mathematically gifted child and a child with a strong interest in mathematics is not very clear. I believe that as long as the child shows extraordinary talent or passion in maths, it should be nurtured. Whether the child is in fact "gifted" should be of secondary importance. Of course, if there is a specific need to define this more clearly, parents may apply to the relevant institutions (such as the Hong Kong Academy for Gifted Education) to seek professional advice.

Why should we have special mathematical training for gifted children?

Currently, most schools offer a competency-based curriculum for average students, which may bore gifted children. In fact, gifted children have the ability to learn more, and in particular understand abstract concepts in subjects such as math and science. Without proper acceleration and enrichment, they may gradually lose their learning motivation and passion. Therefore, we should provide appropriate training for gifted children, to enable them to develop their full potential.

There are many Mathematical Olympiad classes, but in fact, what is Mathematical Olympiad?

"Olympic" is now mainly used for sports competitions, and "Mathematical Olympiad" refers to mathematics competitions. There are a variety of math competitions, in varying degrees and levels, from elementary school to university, from district to territory, cross-regional, and international level. The competition is different from school math tests. It generally focuses on thinking and problem solving skills, and covers a diverse range of topics. Students need to be flexible in the use of their mathematical knowledge and skills, rather than relying on drills and rote.

Should I let my mathematically gifted child participate in "Mathematical Olympiad" classes?

Participating in mathematics competitions is a common way in which mathematically gifted children can broaden their horizons and develop an interest. Through competition and related training, the children get to know other children, build friendships during the competition, and learn from each other through discussion.

However, mathematics competitions for mathematically gifted children are not the only option for the development of their talent or interest. In fact, some gifted children are not keen to compete, preferring to just contemplate in solitude and do their own research. Using a sports analogy, some people choose to become athletes while others only consider sports as an interest or as a way to meet new friends with similar interests.

In addition, unless it is a higher level mathematics competition (for example, representing Hong Kong in regional or international competitions), participating in competitions does not necessarily equate to attending "Mathematical Olympiad" classes at tutorial schools. We also think that math competition training should not begin too early. In general, you can start small or after five (of course, children with outstanding performance and a particularly strong interest can start a little earlier). Getting started too early runs the risk of children not having enough knowledge to develop logical thinking and effective problem-solving skills. This would possibly lead to the opposite desired outcome that the students would learn through drilling which only adds pressure to them.

Apart from participating in maths competitions, are there other ways mathematically gifted children can develop their potential?

There are various institutions in Hong Kong which provide maths curriculum for gifted children. Their aims can be divided into three categories:

- **Competition Training:** The purpose of the training is to equip students with skills for maths competitions. The content focuses on problem-solving skills and involves some mathematical knowledge.

- **Accelerated Learning:** Currently, a number of university mathematics departments offer courses for secondary school students. This allows those with higher ability to gain early exposure to higher level mathematics and prepares them for future advanced study.

- **Broaden their horizons:** School maths curriculum focuses more on computation, and the current examination structure easily lends itself to a teaching style that makes students rely on drills which bore students. Interesting topics related to daily life are generally not covered in a conventional mathematics curriculum but discussed in enrichment programmes through which students can broaden their horizons.

Due to the diverse nature of these three types of courses, parents may need to make a choice based on the children's specific needs. For example, for children who like to solve problems and challenges, they can be encouraged to participate in maths competitions and related training courses; for children who want to increase their maths skills, accelerated learning courses can be chosen; or if you want to cultivate the children's interest in mathematics, joining an enrichment program would be more appropriate.

What can I do if my child is obsessed with mathematics? What if I am concerned that it will affect his academic studies?

Unless there is a serious imbalance in the distribution of time (for example, children do not go to school on time, fail to complete homework, etc...), it is not a matter of concern. Isn't it good that a child who likes a subject so much appears to be "addicted"?

As for the effect on children's studies, it is actually a trade-off between spending time on mathematics and participating in any other activities which would to a certain extent affect their studies. Parents and children may need to discuss how to allocate time, and parents should encourage children to develop interests as a prerequisite. In fact, I have been in contact with mathematically gifted children, but none of them abandoned their studies because of addiction to mathematics. Spending all the time on studies may only help students attain a slight improvement in academic results. When choosing between a keen interest in a subject and a slight improvement in grades, one has to decide which choice is more appropriate.

As a parent, what can I do to help the mathematically gifted child?

As mentioned earlier, parents should encourage their children to develop interests. The support from parents is very important for their gifted children's self-development. If young gifted children do not appear to be resistant, parents can let them participate in different types of courses and observe their performance and response. These enables parents to shape the most suitable direction for the children's development. The competent parents also engage their children in some mathematical problems as a family activity, which can both cultivate the children's interest and promote the parent-child relationship. For older children who have more mathematical learning experiences (for example, Form 3 or above), they generally understand their own strengths, and know how to make a choice or who to seek advice from. In this case, parents can give them the freedom to do their own things, and provide moral support as needed.

Finally I must mention, whether their children are participating in competitions or accelerated maths courses, parents should not emphasise too strongly the performance outcome. Both success and failure are valuable experiences and part of the overall learning process, which is far more important than the result. In fact, the difference between these "results" and the children's future development and achievement are generally not significant. After developing their skills, parents should let their children grow up happily, and free them from unnecessary pressure arising from their gifted identity.

Are there online resources available?

Yes. In fact, nowadays, with the advanced information technology, parents can find a lot of resources via the internet and they should also encourage children to make good use of ICT to facilitate learning. Here are some useful sites:

Name and web site address	Brief introduction
Mathematical Database www.mathdb.org	This maths website was created by the author and a group of people who love maths. The content consists of mathematical games, maths stories, mathematics teaching skills, and many maths competition related resources for different levels of students. The website also hosts competitions or events from time to time with the Hong Kong Academy for Gifted Education and other organisations.
Wolfram Math World mathworld.wolfram.com/	This site is basically a mathematical dictionary (currently only available in English). Just enter a mathematical term and it will show the definition and some relevant information. This is more suitable for senior secondary students or higher.
The On-Line Encyclopedia of Integer Sequences™ www.research.att.com/~njas/sequences/	Just enter a few integers, such as 1, 1, 2, 3, 5, 8 and the system will search for all sequences, along with explanations and a large number of references. Suitable for junior secondary students or higher.
Wikipedia zh.wikipedia.org/zh-hk/	It is an online encyclopedia with comprehensive information (not limited to mathematics). Just enter any maths-related terms and you can find links to related pages. It often has links to pages related to the interpretation of terms and more links, and from that the visitors can experience the true meaning of "endless learning"!

In fact, there are too many highly recommendable maths websites, but due to limited space, only a few have been listed. You can refer to the above-mentioned "Mathematical Database", and also go to some internet search engines and enter relevant search words, then you can get a lot of maths websites links. As the old saying goes "a book holds a house of gold," and today's "book" is not only limited to traditional publications because the Internet has become the world's largest and most convenient "library". Spend some time every day browsing, in order to reap the benefits. Of course, one of the problems of advanced information technology is the proliferation of unchecked information, and both parents and children should be mindful of the need to exercise independent thinking and take advantage of the true benefits of this technology.

Profile of Mr. Law Ka-ho

Mr. Law Ka-ho, who graduated from the Department of Mathematics (B.Sc., M.Phil.), the University of Hong Kong, has been selected to represent the Hong Kong Secondary School International Mathematical Olympiad. Mr. Law is currently a member of the International Mathematical Olympiad, Hong Kong Committee, and has spent many years designing and teaching the maths competition training courses for gifted students.

Tips for Parents

1) Most gifted children like to compete with others. In competitions, being able to get along with others is sometimes necessary. However, cooperation with others needs a lot of skills like compromise, which is not always easy for some gifted children. Therefore, the development of social skills of gifted children is something parents should not overlook.

2) The United States has many specially designed online courses for gifted children. Parents may enrol their children in the programme in accordance with their need(s):
http://epgy.stanford.edu/courses/index.html
http://www.cty.jhu.edu/ctyonline/index.html/
http://www.artofproblemsolving.com/School/index.php?
http://ocw.mit.edu/index.htm

Research Corner

Talent or Giftedness?

Professor Françoys Gagné's "Differentiated Model of Giftedness and Talent"

Foreword

If I asked you to list what your gifted child excels in, would you write these cognitive characteristics of gifted children: "His learning ability is very good, and he has a very good memory"; "He has a very strong curiosity and is observant" or "He has exceptional musical talents and can replay a piece of music just heard?" If I asked you to list what you think the characteristics of successful people from different areas in our society, would you list the following characteristics: "that scientist has very comprehensive scientific knowledge, and he can also use his extraordinary powers of observation and innovative methods to solve problems that others cannot think of"; "that great musician not only performs other people's works, but is also able to add new elements to make music better?"

Do you notice that we often assess whether a person is excellent or not in his own professional field based on the talent demonstrated, rather than his innate ability? Many parents want to know "how to nurture a child's giftedness", but in fact they should think about "how to transform the giftedness that children are born with into the talent that can be beneficial to society?" This article introduces Professor Gagné's theory of the distinction between giftedness and talent through his Differentiated Model of Giftedness and Talent for parents to differentiate the concept of "giftedness" and "talent", and understand some factors that may develop "giftedness" into "talent".

Model Summary

In Professor Gagné's "Differentiated Model of Giftedness and Talent" (DMGT), there are five elements: (I) Gifts: the child's innate ability; (II) Talents: they can be developed through systematic training in addition to different environmental factors; (III) Talent Developmental Process: the process through which giftedness is developed into talent; (IV) Intrapersonal Catalysts and Environmental Catalysts: it can affect the developmental process; (V) Chance: the probability of co-occurrence of the different conditions (giftedness, internal catalysts and external catalysts); it is summarised collectively as "chance" (Diagram 1). The following is a detailed description of the five elements.

Gifts

Professor Gagné's model proposes that natural ability is divided into six areas: **INTELLECTUAL**, **CREATIVE**, **SOCIAL**, **PERCEPTUAL**, **MUSCULAR** and **MOTOR CONTROL** (the last two areas are generally evident in sports such as ball games or gymnastics). These natural abilities can be observed in children's daily activities within the course of their schooling; for example, to observe their intelligence in reading and learning a foreign language or understanding new mathematical concepts; to pay attention to their creativeness in story telling, painting or playing with toys; and to observe their social skills through their daily interaction with other students.

Although we call it giftedness, and see these capabilities in the child's individual differences from a young age, but according to Professor Gagné, these capabilities are not all innate. Although some differences are determined by human genetic factors, the living conditions of children in the early years of development have a significant impact on these capabilities. In summary, the faster the learning process in any given field, the higher the natural abilities in that field.

Talents

When gifted ability is translated into various activities/performance skills or knowledge through systematic training, we can define it as "talent". The ability/performance can be grouped into nine different categories. Six categories (technical, science and technology, arts, social service, business operations and administration/sales) are modeled on the Holland's model (RIASEC), and the other three categories are defined by Professor Gagné (academics, games and sports). Each category is listed below:

Diagram 1

Academic	Language(s), maths, sciences, humanities, vocational
Technical	Transport, construction, crafts, manufacturing, agriculture
Science and Technology	Engineering, medical, social
Arts	Creative, performance, Applied, visual, written, spoken
Social Service	Health, education, community
Administration/Sales	Management, marketing, protection, inspection
Business Operations	Records, financial, distribution
Games	Video and card, chess, puzzles
Sports and Athletics	All kinds

Parents should note that the same kind of giftedness can be developed into a very different talent depending on the nurturing environment and different types of training. For example, a child with an excellent memory and the ability to analyse data could in the future become a great historian, biologist, or even card game player of blackjack or poker, while a child with strong motor skills can become a good musician, painter, or magician.

Talent Developmental Process

High natural abilities or aptitudes serve as the "raw material", or the constituent elements of talents. In other words, one cannot be talented without first being gifted in the area which is to be developed into a talent. However, having high natural abilities does not necessarily mean they can be developed into talents, as seen in academic underachievement of intellectually gifted children in schools. It is only through proper and systematic study and training that the talent of gifted children can be developed.

The talent developmental process can be understood by dividing it into three parts; **ACTIVITIES**, **PROGRESS**, and **INVESTMENT**. **ACTIVITIES** are methods used for selecting gifted children and nurturing their talents. They can be curriculum, as well as learning environment and models (self-study at home vs. school training). From the **PROGRESS** point of view, the development of the gifted children to achieve peak performance is divided into different stages (novice, advanced, proficient, and expert), and we assess how fast each level is reached. The development of gifted children can also be observed from some important turning points that may occur such as being discovered by a teacher, being awarded prestigious scholarships, etc. **INVESTMENT** can help us quantifies the time, money, and energy spent on talent development.

Intrapersonal Catalysts/Environmental Catalysts

What parents should be most concerned about is that within the model proposed, the catalyst has a significant impact on the development process. The appearing or disappearing of catalysts can cause positive or negative effects to the development of talent.

Please refer to Diagram 2 and note that **INTRAPERSONAL CATALYSTS** and **ENVIRONMENTAL CATALYSTS** are not placed side by side, and intrapersonal catalyst partially overlaps with the environmental catalyst. Professor Gagné used this to emphasise that individual internal factors have a filtering effect on external environment. Gifted children will continue to choose information and stimulation that they wish to receive.

Intrapersonal catalysts can be divided into three areas namely **PHYSICAL TRAITS**, **MENTAL TRAITS** and **GOAL MANAGEMENT**, and goal management can be divided into **AWARENESS**, **MOTIVATION**, and **VOLITION**. To develop talents, gifted children should first be aware of their own strengths and weaknesses. **MOTIVATION** means that they discover their goals and know how to achieve these goals through different means of training and learning opportunities. **VOLITION** helps them face obstacles or setbacks.

Environmental catalysts have three sub-components, namely the **MILIEU**, **INDIVIDUAL**, and **PROVISION. MILIEU** refers to society, weather, climate, as well as social, cultural, economic and other factors. **INDIVIDUAL** refers to gifted children's parents, brothers, sisters or classmates who have a significant impact on them. **PROVISION** includes all development-related programs and services.

Chance

CHANCE literally refers to those factors that we cannot control. Diagram 2 shows the column surrounded by other parts of chance, expressed in terms of gifts (natural abilities), individual's internal or external environment and development process which are all uncontrollable. We cannot control what genetic factors, personality or ability babies get from their parents. We also have no way to control what generation, family, and social environment the baby is born into.

Conclusion

Today, people still have a lot of different views about the nature of "giftedness". The "Differentiated Model of Giftedness and Talent" is among one of the most widely used theories. This model's strength is that it clarifies the difference between talent and giftedness, and provides a detailed analysis of the various internal and external factors that impact talent development.

If parents understand this model, they can focus on the various "catalysts" and think about how to change the internal and external factors of gifted children, so that the talent of the children can be fully developed. Methods include helping them understand their own capabilities and broaden their experience, as well as assisting them in developing their talents. When you hesitate about what courses to enrol your children in, you can discover interests together with them. Explore some interests that could be developed into talents across a whole life-time.

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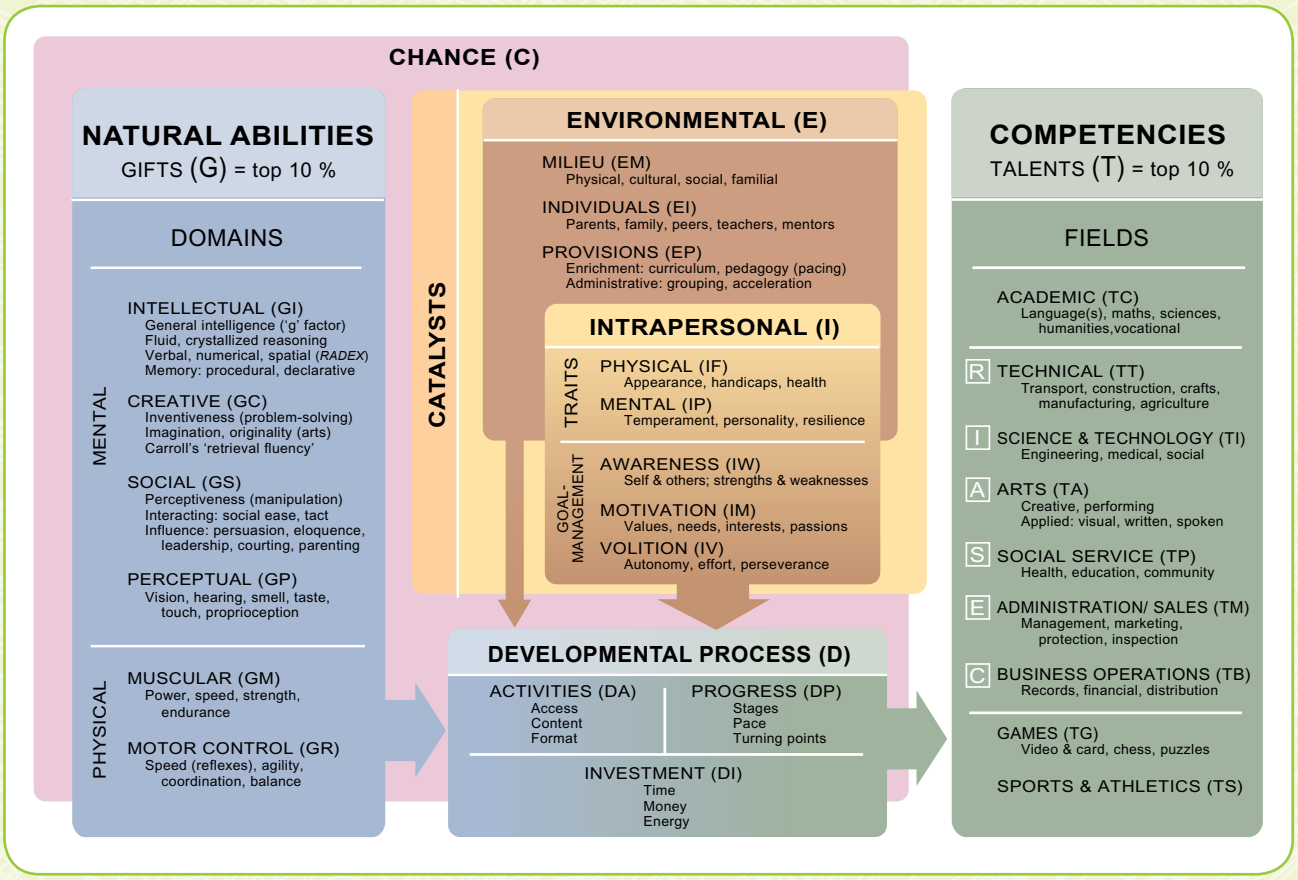
Tips for Parents

Holland's model (RIASEC)

The Holland aptitude test is based on the theory that human beings belong to one of six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). People's personality types will affect how they choose a career. People of the same personality type working together in a job create a work environment that fits their type. For example, when artists work together, they will create a work environment that can enhance their creative thinking and behaviour, and in this situation, they generally have a higher level of achievement and satisfaction. Therefore, to help us find a suitable work environment, we need to recognize our own personality type. Most people belong to a combination of types, and therefore can choose from a diverse range of occupations.

Diagram 2



The Gifted Child but Hates So

Case Sharing

I had a five-year-old daughter, who from a very young age has been showing signs of different talents to other children of the same age. She loved reading all kinds of books on different topics such as literature, natural sciences or engineering. She also loved movies and painting, and general television programs didn't appeal to her. She could concentrate six hours straight, reading or painting. She mastered a lot of vocabularies and had a talent for learning languages. In addition to her mother tongue, she was able to master the French, German, and Dutch languages. She loved visiting museums, exhibitions and bookshops, and constantly raised many deep questions. She also loved writing poetry, composing music, and designing her own dance steps. Coincidentally, both of my friends thought she was very special, a very gifted child. I did not intentionally use the label "gifted child". I just wanted to see her pursue knowledge with enthusiasm.

But since she started school, everything changed. She, who used to be a lively and cheerful child, became quiet and irritable, and lost her interest in learning. School life made her feel fatigued and bored. The teacher did not allow her to ask questions and this made her depressed. The repetitive and simple curriculum content also caused her to lose interest totally. She no longer liked to read and paint anymore, and just seemed lifeless.

Witnessing her change was very saddening for me. She came home from school every day with a long face, and always dragged her feet to go to school. She was a different person to what she used to be, a child who was independent and efficient in getting things done and organised. Therefore, I could not help but ask: "Is receiving education at school suitable for my daughter?" In Hong Kong, what options do parents have? How do they make these high-ability children enjoy learning? I knew my daughter was trying to fit into school life, but she was not happy. I saw her needs, but was unable to change the reality. This sense of helplessness was so strong that I really didn't wish to do nothing. This was perhaps why my child and I needed to help each other to overcome the obstacles.

Strategies

School can be a difficult place for some young gifted children at the beginning especially when they are coming from a very responsive and stimulating home environment. Imagine these kids have already mastered all the basic literacy long before they receive education and now they are "forced" to learn step by step again. It is in fact a stage at which some of them start to rebel against the system that is designed for children with average abilities, and offers little capacity to cater for the abstract thinking ability of gifted children.

Some schools provide diverse learning opportunities for gifted children to excel. But in some other schools, the special needs of the gifted are not recognised. Therefore, the preparation for schooling is important to gifted children. The transition from a flexible and tailor-made enriched home environment to a structured and made-to-fit-all classroom will need to be addressed. Mental rehearsal can be made through discussing the concepts of how one can adjust to a large group of students and the differences or the mannerism between talking to parents and teachers.

Home-school relationship is one of the important factors to facilitate provision for gifted children. Understanding the teachers' perspectives can help build the relationship. The challenges that teachers face are authentic and meeting parents out of regular parent-teacher meetings can be threatening at times. Expressing your appreciation to the teachers can help establish a good working relationship in the near future.

who Loves Learning

chool

Theoretical Background

When problems arise, parents have to understand that a child's perspective can be very different from that of his/her classmates 'or teachers'. Before attending the parent-teacher meeting, parents have to be clear about the objectives and plan for the steps to achieve them. Also, parents may need to collect some constructive data on child's behaviour before the meeting. If the data show clear "patterns", it will be more convincing for parents to make assumptions or claims. Always try to understand the perspectives that are different from yours and focus on the strategies that both you and the school can work on together. At the end of the meeting, acknowledge the effort made by different parties, and make sure that the date for follow-up meeting has been confirmed. The essential part of the whole process is that you role-model problem-solving skills for your gifted children.

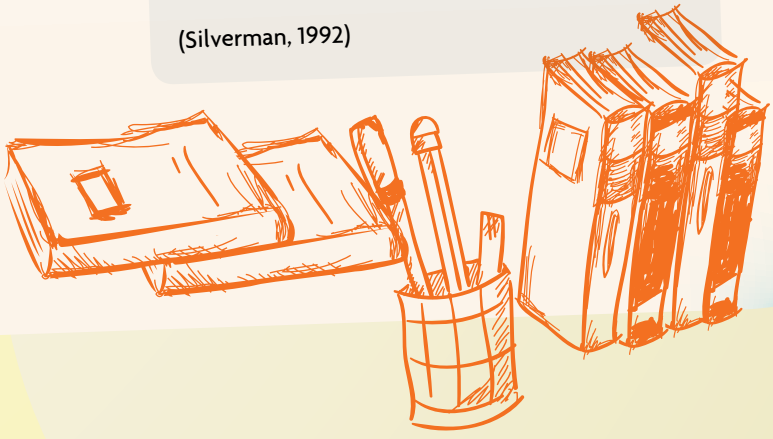
Being the advocate of gifted education, parents indeed have more resources and practical strategies for approaching productive solutions to meet the needs of the gifted. In long run, it would be helpful to liaise with other parents of similar needs and help schools build up a repertoire of resources for giftedness. It could be in forms of gifted articles, journals, news clippings, provisions in the community and related teacher or parent training on giftedness. By focusing on the needs of gifted children in the schools as a whole, parents are in fact impacting the school culture on supporting the gifted.

Early features of giftedness

Some early signs of giftedness include:

- unusual alertness in infancy
- less need for sleep in infancy
- long attention span
- high activity level
- smiling or recognising caretakers early
- intense reactions to noise, pain, frustration
- advanced progression through the developmental milestones
- extraordinary memory
- enjoyment and speed of learning
- early and extensive language development
- fascination with books
- curiosity
- excellent sense of humour
- abstract reasoning and problem-solving skills
- vivid imagination (e.g. imaginary companions)
- sensitivity and compassion

(Silverman, 1992)



Significance of early identification

As described by Gross (1999), the early years of schooling for some exceptionally gifted children can be quite at risk, as there might be misidentification, inappropriate grade-placement and a seriously inadequate curriculum. What complicates the issue is the early awareness of feeling different from other students. Teachers who do not have any knowledge in giftedness barely understand that the uniqueness of gifted children and thus putting the highly gifted ones in a very disadvantaged position. Therefore, early identification of this group of young gifted children and the appropriate provision which follows is very significant in helping them stretch their potential and excel.

Early placement for highly gifted

Many research data show that gifted children who enrol early in kindergarten or first grade based on their intellectual, academic and social readiness perform as well as their older counterparts (Robinson & Weimer; 1991). However, for the highly gifted, schools should also consider some ability grouping apart from the provision of early entrance (Gross, 1992). Thoughtfully designed enrichment with a strong focus on the young children's special talents is essential for any gifted education programme (Harrison, 1998).

Schools with or without gifted programmes

Selecting the "right" schools for young gifted children has never been an easy task for parents. Dr Treffinger (2004) provides some advice for parents. First of all, parents need to understand how their children learn and in what content areas or extra-curricular activities their children demonstrate strengths, and see if the related activities are valued and provided by the schools. They should also find out if the enrichment opportunities in the schools are busy work, or activities that require students to learn and apply critical and creative thinking, problem solving, decision making, and teamwork skills and how these skills are taught in classrooms. The other crucial factor is about how teachers ensure the learning is exciting and original rather than boring and repetitious. Last but not least, whether the school programmes can help students learn social or interpersonal skills is also a critical indicator.

Resources

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Being "gifted" is not synonymous with success

Some people think that if they are gifted, their success is within reach. In fact, gifted children have a strong learning ability but cannot succeed without putting in effort. For example, in my case, every little improvement required a lot of time and energy. A lack of effort would result in failure. The taste of failure was deeply felt when I failed my level eight piano exam, and also when I did not win any awards at the Asia Physics Olympiad.

I do not demonstrate potential in a particular area, but my learning aptitude does differ, such as my thirst for knowledge and understanding. It is said that every teacher is an inexhaustible supply of water tanks, each student is assigned a ladle to scoop the water, and the effort of the student is the key to success. I'm greedy and do not easily let go of any water tanks. Even after people have dispersed, I will scoop a few more ladles of water. Over time, my "natural reservoir" will accumulate more and more water. Just scooping the water is not enough; it is necessary to savour, digest, and absorb the teacher's water in order to make the water my own. Strive to learn a little more, think a little more thoroughly, look a little deeper, and this is the secret of learning.

Another magic weapon of mine is persistence, setting a target, and not easily giving up. Last year, I participated in a nine-month HKUST physics training course sponsored by the HKAGE, to represent Hong Kong in an international competition. Students two years older than me were trained over the same period, and the advanced physics courses taught were quite difficult. At the same time, I also received training in the Mathematics Olympiad and participated in many events. Weekends were the busiest periods.

Mornings would be spent at Sai Kung, afternoons at the HKAGE in Kowloon Tong, and the evenings at the Mathematical Olympiad in Yau Ma Tei. I often had bread on the bus for lunch and dinner. In April, intensive physics training and competitions kicked off, and being constantly on the move, I had reached a point of exhaustion. On the one hand, I received intensive training eight hours a day and took part in external competitions for more than ten days; on the other hand, I still needed to catch up with normal school curriculum, homework, and examinations.

When completely exhausted, the idea of giving up does cross my mind, but giving up halfway does not agree with my philosophy of life. I cherish the hard-won opportunity to learn, am eager to win and want to honour Hong Kong and my school, but I am also willing to challenge the limits of my own ability and improve myself. The encouragement I receive from teachers, students, and parents gives me the strength to carry on. In this way, through clenched teeth, we can break through any difficulty together. Although it's hard, it is also a very happy and fulfilling feeling.

Although for some more than others, being gifted is a condition for success, but by no means synonymous with success. They have to exert more effort than the average persons because of their dedicated thirst for knowledge.

Learning to get along with others

In our lifetime, we need to explore many topics and it's often easier seeking knowledge than getting along with others. As a child, I didn't like mixing with noisy children of the same age. Instead, I preferred talking with my teachers. As I gradually got older, I realised the importance of being part of the community, and hence took the initiative to make new friends. When starting to talk with others, I always found myself unable to abstain from sounding like an expert on each topic of conversation, which sometimes left others feeling bored, and this is always misunderstood as a show off. Gradually, I learned to choose other conversation topics which may be more interesting to others, such that on the one hand letting others enjoy chatting, and on the other hand I would also benefit from the interaction. I found that each person has his own areas of interest and skill, and exchanging with them was also a process for my own self-improvement.

In primary school, I was shy and rarely spoke in class, but the teacher always encouraged me to express my views. In secondary school, I was reborn and desperate to speak. However, teachers reminded me to respect others' rights to think and express their views, too. Learning to get along with others is a really deep issue, but since I usually read books far more than interacting with others, I never seem to be able to get it right. Learning continuously to adjust my individual attitude and behaviour in group interaction is absolutely what I need to continue to reflect on.

Awards do not equate to success

I often win at competitions, but awards do not equate to success, and it is not entirely why I enter competitions. Far more precious than medals is the knowledge learned, what one sees and hears, the friendships made, and the overall experience of going through the training and competition. Academic excellence for students is important, but in the scheme of things, it is really only a small part of what's important in life. The old Chinese saying goes "cultivating one's own moral worth; while reaching the goal successfully benefits everybody". My biggest goal in life is to maximise my potential for the benefit of others, for the advancement of the greater good.

Profile of Andy

Andy, 16, started to participate in the Education Bureau's training programmes for gifted students from 2008, and has been accepted into the Hong Kong Academy for Gifted Education for both mathematics and physics training. In primary school, Andy's academic performance in mathematics, physics, writing, etc. was outstanding, and he represented Hong Kong many times in international competitions and won many awards. Andy has a strong curiosity and broad interests. He is easy-going. He studies very hard and is determined to do his best for the benefit of others.

Award-winning record for representing Hong Kong in competitions

International Invitational Elementary Mathematics Tournament (2006, Indonesia) individual gold medal, overall group champion title.

I Love Math National Youth Summer Camp (2006, Qingdao, China) first prize primary group of individuals

Twelfth Hua Cup Mathematics Invitational Finals (2007, China Huizhou) individual gold medal

International Mathematics Olympiad (2008, Thailand) individual silver medal, group fourth place

Tenth International City Youth Mathematics Invitational (2009, South Africa) individual silver medal

I Love Math National Youth Summer Camp (2009, Tianjin, China) first prize in junior high school group of individuals

Pan-Pearl River Delta Physics Olympiad (2010, Hong Kong, China) individual merit award

Forty-first International Physics Olympiad (2010, Croatia) individual silver medal

41st International Physics Olympiad (2010, Croatia) individual silver medal

Students read the report of the Global Chinese Competition (2010, Malaysia) senior merit award

A Mother's Thoughts

Bringing a child into this world is far from the entirety of parental responsibility. To develop his potential and nurture his ability to meet future challenges is also our inherent responsibility. In the child's development process, the parent's role is not static; instead it must continuously evolve with the growing needs of the child.

During his childhood, Andy was shy, quiet, and inarticulate; by no means the clever one among his peers, and I could not see what he was particularly good at. But he revealed some of the potential that, as a result of training, was brought to a greater height of development.

Andy has a strong intellectual curiosity and listens to advice given. From an early age, through travel, games, reading and other ways, we consciously tried to ignite his interest in various things, in order to enable him to accumulate extensive knowledge. I remember at the age of eight when he went to Japan, he watched the World Cup matches, and fell in love with football. We not only provided him with a large number of books and magazines about football, but also guided him to study world geography and geopolitics through his interest in football teams of different countries. Before each trip, he learned the trip destination history, culture, and information, then upon return, he would write about his travels. He had immense interest in different subjects such as educational computer games, books on science, history series and history books, and he was able to learn the knowledge naturally, and with ease.

As Andy grew into a juvenile, the focus for nurturing shifted from the accumulation of knowledge to enhancing his overall skills. Like the construction of buildings, in addition to the building materials, the design of the overall structure is needed. His studies led him to pay more attention to the relationship between things, rather than a single phenomenon. First, place each building block in the right position, then build a knowledge system from an overall perspective by induction and summation. This ability to think in big picture was of great help to him in later higher level of learning. During this period, he began to demonstrate strong logical reasoning ability.

Andy read a wide range of books, but always in the areas of science, philosophy, history, geography, and other books of interest, rather than pure literature books. Seeing his characteristics of thinking and preferences, when he was in Primary 4, I (who used to study literature) bit the bullet and opened an Olympic mathematics book with him. At the time I could do nothing, but for Andy it was like a surprise, discovering a new world. Since that time, his enthusiasm for mathematics, and then physics started to expand zealously.

Prior to this, we had been playing the role of guiding him to discover, enhance, and achieve his potential. In subsequent years, under the training of teachers in school and at the institutions that provide enrichment for gifted children, Andy's mathematical achievements increased in leaps and bounds. At this point, the parents' major role was to provide psychological and emotional support. Starting from upper primary, Andy participated in many inter-school math and science competitions, at home and abroad every year. Clearly, we no longer have the ability to follow his specific learning content, but we will try to understand his progress

and challenges from a macro point of view. Before a big competition, we would help him regulate his emotions, analyse his weaknesses, and discuss solutions for potential problems together. In our spare time, we would exchange views on life like friends, and indeed many of his ideas enlighten us.

Although parents make great sacrifices in bringing up a child, they have learned that far more is gained in return. In the process of accompanying a child's development, of course, parents need to constantly adjust their role, modify their thoughts and actions, and expand the knowledge and skills. From hearing the child's first cry to talking to him like a good friend, we feel the miracle of life over and over again, and taste the pain and joy of parenthood.

Profile of Andy's mother

Nathalie (Mrs. Loo) graduated from the Peking University (Western Languages Department), and went to Europe to study French literature. She has been involved in editing, translation, and tourism. Now she is a full-time housewife.

Tips for Parents

1) In addition to providing different opportunities for gifted children to develop certain areas of knowledge and generic skills, we have to teach children to establish self-direction and social responsibility.
2) In the face of the age of information overload, parents should teach their children critical thinking skills, so that children can analyse and integrate a variety of information.

Children, what should I leave to you?

Author: Xie Shumei (Carol)
Publisher: Olin Culture & Big Ying Culture
Year: 2007

Arriving at the corner of the bookstore, I saw Xie Shumei's "Children, what should I leave to you?" This book has an interesting title, but it was placed in a corner, as if it were neglected. Does that mean it is not as important as books about financial management or secrets to success?

Parents, have you thought about what you can leave to your children to help them readily face the future? What parents want to leave to their children is different. Should they leave material things, wealth, tradition, experience or values? What should parents of gifted children leave to them? Should it be courage, justice, understanding of their own abilities, or the attitude of lifelong learning? Whatever it is, parents should take time to plan how to guide children as early as possible.

This is not a book about secrets to success. It does not directly tell you what to leave to your children. After all, this is a very personal choice. Maybe that is why this book has been neglected. What makes this book so special is that the author uses every little example in daily life to inspire the readers to teach children about interacting with people, approaches to problems and moral behaviour. The reader can be a third party observer of how the two daughters of the family learn, experience, and grow under the guidance of their mother.

As mentioned in the book, the author's daughter once made an attempt to lie, in order to hide her academic grades. As parents, we must teach children the concept of right and wrong, and therefore not to lie. But the mother has chosen to let the child experience the feeling of lying because her mother thinks lies, like a lot of things in the world, are not absolute. It is impossible for someone not to lie, but sometimes we are willing to resist the inclination to lie for a more important idea or for a person we care about." "So she shares her own standards with the children to determine whether to lie or not, in order to help them make their own decision."

Some parents of gifted children have the idea that a child's potential can be realised as long as they provide their children with more opportunities in daily life. However, if it is so easy to nurture a children, do we really need gifted education? Is it really so easy to give children such opportunities in their daily lives? In addition to genetic factors, nurturing and personal experiences are also important factors which affect children. Who is guiding the children along the bumpy road of growing up? Who guides them when they are struggling? Parents may see many things as trivial in daily life, but the children may find even a small issue interesting, and feel curious about it. Many parents tend to be perfunctory regarding children's problems and do not give proper responses. Does this practice enable the children to understand at a deeper level, and think in a different perspective? Can this also allow them to reflect on their own attitude? These are many valuable opportunities, but not every parent can grasp them.

We would like to share an example in the book which describes how to use "daily issues" to conduct intimate sharing with children. The author watched a short film called Free Hugs on YouTube with her daughter. It was about a young man, who was very depressed because of the unhappy things going on in his life. He saw that most passengers at the airport had family and friends to meet them, and watched how everyone was hugging and smiling, while he is alone in the world. He also wanted to have a hug, so he wrote a card with the words "Free Hugs" on it, then walked out to the road with his card, displaying to passers-by. People just kept passing by without stopping, until the emergence of one old woman, who gave the young man his first hug. The old lady's dog had just died, so she was very sad, and also very much wanted to be hugged, for some comfort. The old lady and the young man hugged for a moment. She smiled and so did he. A woman beside them saw this, and stepped forward to hug them. Soon after, a lot of people were hugging and this lead to television coverage of this news. The free hug concept spread throughout the world. One sad young man's depression was enough to actually evolve into a global force. "Life is a circle. You need to give before you can receive; and what you give out will come back to you." These are the words the author wrote for her daughter. The author enables the parents to see how to use daily life examples to guide their children to ponder some deeper thoughts, rather than randomly urging children not to trust strangers. We can also reflect on why we have seen potential life lessons elsewhere but didn't seize the opportunity to share them with our children.

Regardless of whether the children is gifted or not, if we carefully plan their early childhood education, nurturing the children's path might be easier. Parents should not underestimate their own impact; even a small response or a simple but good habit such as punctuality, is sufficient to become the children's first teacher. This book enables everyone to "return to innocence", like a new beginning to think about their own expectations and child nurturing methods. "While children are still young, reserve time for them! If you make the time, children will naturally let you know what they want you to leave to them in the future".

Tips for Parents

Professor Lickona has defined character education as deliberately helping people to understand, pay close attention and put important moral values into practice. There are two main aspects of character: performance character (qualities such as self-discipline and perseverance that enable us to give our best effort and do our best work in any performance context); and moral character (qualities such as honesty and care that enable us to be our best moral self). Therefore, we need to let children participate in some activities that enable them to apply critical thinking to moral and ethical issues, and allow them to practice ethical behaviour, such as participation in service learning and volunteer work, etc.

Teacher Professional Development Division (December 2010 – May 2011)

Programme Title	Target Group	*Date
Thematic Courses		
Thematic Workshop: "Providing Support to Twice Exceptional Students" by Dr. Susan Baum	School Social Workers, Guidance Teachers, Educational Psychologists, Secondary & Primary School Teachers involved in guidance or counselling	December 2010
Thematic Workshop: "Concept Based Learning"	Primary and Secondary School Teachers	April 2011
Structured Course		
Introductory Course: "Introduction to Gifted Education" (Primary School Session)	Primary School Teachers	January 2011
Introductory Course: "Introduction to Gifted Education" (Kindergarten Session)	Kindergarten Teachers	February 2011
Intermediate Course: "Curriculum & Instruction"	Primary and Secondary School Curriculum Leaders and Teachers (with basic knowledge in Gifted Education)	April 2011

Student Programmes and Services Division (December 2010 – May 2011)

Humanities	Mathematics
Future Curator Training Course	Maths Ignition
Enigma of the Social Worlds	Mathematics in 18 lessons
English Creative Writing course	International Mathematical Olympiad Training
	Introduction to Olympiad Mathematics
	Mathematics Impossible
Leadership	**Sciences**
"L"-wisdom – Leaders for the New Generation	Enhancement Programme for Gifted Students in Physics
Hong Kong Government Study and Leadership Training	Training for the International Junior Science Olympiad
Debating Skills Workshop	Biomedical Science Workshop
	Multi-disciplinary Credit-bearing Course in Science
Personal Growth and Social Development Series	"Self-discovery" Journey (workshop)
	"Team War" (outdoor training)
Multi-disciplinary	University-based Multi-disciplinary Study Project
	Harmonies In Nature: A Dialogue Between Mathematics and Physics
Thematic Talk	Academic Talks in each domain are held regularly

Open to all secondary school students. (All student applicants must be nominated by their schools.)
International Junior Science Olympiad - Hong Kong Screening
"International Mathematical Olympiad Preliminary Selection Contest – Hong Kong
Hong Kong Physics Olympiad
Hong Kong Chemistry Olympiad for Secondary Schools

2010 Parent Conference Highlights

The Hong Kong Academy for Gifted Education held its first parent conference on 15 May 2010, which was entitled "Focus on the Future: Learning Opportunities for Gifted Children". This was the first conference in the Greater China region for parents of gifted children, and was of great significance. It gave full play to our adventurous and innovative spirit, and many parents have recognised our efforts in organising the meeting. The Parent conference provided a platform for participants to work together to gather powerful support for gifted children, so that their potential can be developed for a bright future. We would like to thank the parents and exhibition participants for helping to make the meeting a great success. Let us take a look at the events of the day!

Keynote Addresses

Concurrent Sessions

Exhibition

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Book: Nurturing the Gifted
Author: The Hong Kong Academy for Gifted Education
Editorial: Dr Stephen Tommis, Jessie Chow, Angel Wan, Samson Chan, Nelson Lai, Chan Mo-yam
Interpreter: Solomon Hui
Publishing: The Hong Kong Academy for Gifted Education

ISSN 2219-4746

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